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COMMAND POLICY

THE OFFICIAL MAGAZINE OF THE DEPARTMENT OF DEFENSE

STRATEGIC FORCE MODERNIZATION PLAN

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By William J. Perry
Under Secretary of Defense for Research and Engineering

The principal policy objective underlying the structure of our strategic nuclear forces is deterrence of a nuclear attack on the United States, our allies, or others whose security is important to us. The **TRIAD** of nuclear forces composed of **SLBMs** (submarine landed ballistic missiles), **ICBMs** (intercontinental ballistic missiles), and bombers has served us well in the past and I believe there are compelling reasons to continue this solidly based deterrent.

Our plans for the future are to modernize this triad of forces to establish essential equivalence in the face of the buildup of strategic forces in the Soviet Union. This will be accomplished within the anticipated mutual constraints of **SALT II.** The requirement for modernization of our strategic forces is driven by three factors:

- force obsolescence,
- force vulnerability, and
- force enhancement to maintain essential equivalence.

Force Obsolescence

In dealing with force obsolescence we are confronted with a cycle which in some cases can extend 30 to 40 years from initiation of development until retirement of the system. About 10 years of that time is used up just reaching full operational capability, followed by 20 to 30 years of operational life. Our current forces, and some

projected to be operational through the 1980s, were originally deployed in the 1950s **(B-52)** and 1960s through early 1970s **(Minuteman, Polaris, Poseidon)** while the Soviets have maintained a constant flow of new generations of systems into their strategic arsenal over the same time period.

The obsolescence problem is different for each leg of the **TRIAD** with the **SLBM** force being the least affected. The deployment of the **Trident** missile, the introduction into the force of the new **Trident** submarine, and the development of the **Trident II** missile should carry the **SLBM** force well into the next century.

The **ICBM** force has had a pause of about a decade in modernization. The **Minuteman II** missile began development in 1963 and began deployment in 1965. This missile is already showing signs of deterioration and we can expect by the mid-80s to be faced with the alternative of retiring the force, replacing the force with new missiles, or undertaking an expensive overhauling of the missiles. The **Minuteman III** missile which began development in 1965 and deployment in 1970, has some elements common to the **Minuteman II.** We can expect to have aging problems with it in the late 1980s and may be required to replace or overhaul it by 1990. Since it takes about 10 years to bring a new missile to FOC (full operational capability), it is time now to consider the development of a replacement missile for the **Minuteman** force merely on the basis of obsolescence.

The **B-52,** which comprises the bulk of our existing bomber forces, was developed in the early 1950s and entered the operational force in 1955. The average age of this aircraft fleet is about 18 years and we project that, structurally, the **B-52** could last beyond 1990. The avionics subsystems, however, are a different story. They are outdated in terms of mission capability and are getting to be too expensive to maintain. We are therefore undertaking a major replacement of these components in the near term.

The question still remains, however, what do we do in the 1990 time frame when the **B-52** must either undergo major structural and engine changes or be replaced by a new airplane, perhaps with a different or complementary mission.

Force Vulnerability

The second requirement driving strategic force modernization is force vulnerability. The Soviets have made major advances in the past five years which will pose an unacceptable threat to our **ICBMs** by the early to mid 1980s and seriously threaten our bombers by the mid-1980s. Their continued effort in air defense is expected to threaten our current bombers and current cruise missiles somewhat later. We do not expect a Soviet threat against our **SSBNs** (nuclear powered ballistic missile submarines) within the next decade but this invulnerability may not be absolute nor last indefinitely.

By far the largest strategic force vulnerability problem facing us today is that associated with our **ICBMs.** This stems primarily from Soviet development of missile accuracy and the projected growth in numbers of their re-entry vehicles (RVs). When they complete development of their fourth generation **ICBMs** the Soviets should have several thousand re-entry vehicles. They could target two re-entry vehicles against each of our 1,054 **ICBM** silos, and still retain the majority of their **ICBM** re-entry vehicles for other purposes.

The effectiveness of a two-on-one attack on our **ICBMs** depends upon a number of factors. But the most critical factor is the accuracy of the Soviet **ICBMs.** As the Soviets close the gap in **ICBM** accuracy, our **ICBM** force becomes increasingly vulnerable. While there is room for uncertainty in our calculations and estimates, I believe our **ICBM** force could be seriously threatened by a Soviet two-on-

NAME ADDITION

Effective with this issue, a change will be made to the title of Command Magazine. Henceforth, the full title will be Command Policy, the Official Magazine of the Defense Department.

Command Magazine was first published in its new four-color monthly format one year ago. After a number of issues were published, a small organization located in Denver, Colorado advised DoD it felt our name was too similar to the title of a periodical it produced quarterly.

Though the two different publications had little in common in terms of format, content or audience, DoD officials felt it appropriate to add the word "policy" to Command Magazine's title. Since DoD's monthly magazine only prints major policy statements by top defense officials, the word correctly identifies the magazine's continuing content.

Beginning with this issue, the name addition will become official, with all other elements of the periodical remaining the same.

The United States is evaluating improvements to present electronic countermeasures systems in FB-111 (below).

DEFENSE news briefs

19th Spruance Class Destroyer Commissioned

The **USS John Hancock**, the 19th of the Navy's newest class of destroyers, was commissioned recently at Pascagoula, Miss.

Spruance class destroyers, displacing 7,800 tons, are designed primarily for anti-submarine warfare but also are capable of operating with carrier task groups and amphibious assault groups.

Armed with two five-inch guns, ASROC anti-submarine rockets and torpedoes, the Spruance class has space to accommodate more advanced weapon systems when they become available.

DoD Energy Requirement 2 Percent of Nation's

DoD energy needs, which account for only two percent of the nation's requirements, are by a wide-margin (80 Percent) in the middle distillate fuels, not the gasoline fuels of the civilian economy.

Nonetheless, warned Deputy Under Secretary of Defense Ruth M. Davis before a House Banking Subcommittee, "The political and economic risks of foreign oil supply interruptions are very serious and very real to our national security — no less so are the military risks."

One of DoD's main thrusts, she indicated, is a joint DoD-DoE plan to develop by 1985 a domestic synthetic fuel industry.

Tarawa to WESTPAC

The 39,000-ton **USS Tarawa** (LHA-1), first in a new class of amphibious assault ships and the largest amphibious ship in service, has joined the Seventh Fleet on deployment in the Western Pacific. Embarked in **Tarawa** are 1200 Marines of the 37th Marine Amphibious Unit. The ship is homeported in San Diego, Calif.

No Notice SAC Alert

Global Shield 79 is the name of a coming Strategic Air Command exercise to test the ability of SAC to implement war orders.

No dates are given, as the point of the exercise is "no notice."

Command posts and field training exercises, including some reserve and guard units committed to SAC, will participate.

New Guided Missile Frigate

A new **Perry** Class guided missile frigate — **USS Clark** — was launched recently at the Bath Iron Works in Bath, Maine.

The **Clark** will be equipped with surface-to-air and surface-to-surface missiles, torpedoes and a 76mm gun. It also carries two helicopters for anti-submarine-warfare and for attack detection over the horizon.

one attack by the early-to-mid-1980s.

The major options available to us to reduce **ICBM** vulnerability include a new missile and missile basing scheme, ballistic missile defense, and a launch-under-attack capability and strategy. Of these, the most straightforward, stable, and enduring solution is the **MX** missile with a survivable basing mode. Ballistic missile defense is limited by the **ABM** (anti-ballistic missile) which allows the use of only 100 interceptors. Abandonment of the **ABM** treaty would introduce a number of new problems, even if it eased our concerns about **ICBM** vulnerability. We do, however, maintain a high technological level in this capability through our Ballistic Missile Defense program. The technological base resulting from this program may, in the future, provide an enhanced survivability posture for our **ICBM** force, even in the presence of extensive threats.

We have the technical capability to launch our **ICBM** force prior to an attack, and we plan to maintain this capability. However, we should not depend on this tactic, since it does not provide for stability in crisis situations, nor does it take account of countermeasures against our warning systems. Nonetheless, we are undertaking to improve our early warning sensors and our ability to correlate warning information to characterize such an attack.

The vulnerability of U.S. bombers is affected by the Soviet **SLBM** force and by the Soviet air defense capability. For a given number of **SLBMs**, their effectiveness against our bomber bases is driven primarily by their distance from the target and the trajectory employed. Both of these parameters directly affect the time available from warning to base escape. To address the problem of an increased Soviet **SLBM** threat, should it develop, we may need to move the bomber bases inland and perhaps increase their number. At present this effort is not warranted. Any new bombers or cruise missile carriers we might develop will have improved hardening to nuclear effects to decrease the time required to escape safely from the base.

To allow more time for base escape we can also improve our warning. Launch of bombers under attack does not present the hair-trigger problem that it does with **ICBMs**, since bombers can be launched and recalled if the attack does not materialize. As indicated earlier for **ICBMS**, we plan to expand our on-going programs to better characterize the nature of an attack and improve warning time.

Once the bomber or cruise missile carrier has safely escaped the **SLBM** attack (and **ICBM** barrage if that materializes), the next problem is penetration of Soviet dominated air space. The Soviets are continuing to develop a new surface to air missile system, the **SA-X-10**, which could

be used against low altitude penetrating targets. We estimate that the system is not yet operational (as indicated by the "X" in the **SA-X-10),** but believe it will begin deployment in the near future. To be effective against the force of small, low altitude cruise missiles that we plan to deploy, the Soviets would need to deploy 500–1,000 **SA-X-10** sites. This would represent a massive investment which would take to the late 1980s to complete. The Soviets are also working on look-down/shoot-down technclogy which will improve their capability to engage at low altitude bombers and cruise missiles that would be lost in the radar ground clutter for their present system. While Soviet technology is considerably behind U.S. technology in this area, we can expect a large scale deployment capability by the late 1980s. To be effective in using a look-down/shoot-down capability, the Soviets would need some means of vectoring fighters to their targets. This could be accomplished with a system like the **U.S. AWACS,** and we believe the Soviets are developing such a capability though its characteristics are uncertain.

There are several U.S. responses underway to counter these Soviet initiatives in action defense. We are evaluating improvements to present electronic countermeasures systems in the **B-52** and **FB-111.** These actions would improve protection against both surface-to-air missiles and look-down/shot down fighters. We are in the process of providing weapons enhancement as we introduce the Air Launched Cruise Missile (ALCM). The cruise missile currently under development will provide a radar cross section or radar signature which is only 1/1000 that of the **B-52,** making the cruise missile very difficult to detect. Improvements now under development, including lightweight ECM (electronic countermeasures), will make later cruise missiles even more difficult to detect. This improved technology will allow us to stay several years ahead of improvements in the Soviet air defense. In addition the cruise missile will fly at very low altitudes, where ground clutter further complicates detection. Finally, a force of several thousand cruise missiles provides great offensive flexibility—flexibility which can be used to concentrate and saturate defenses, making the task of defense planning very difficult. We are also considering cruise missile carrier aircraft which could substantially increase the number of cruise missiles in the future air-breathing force.

While we do not anticipate a serious threat to our **SSBNs** in the next decade, we must be concerned about a potential **ASW** breakthrough. Therefore, the **Trident SSBN** now being produced to replace the Poseidon force in the mid-80s and beyond has been designed to emphasize ultra-quiet operation to limit detection to relatively short ranges. At the same time, the **Trident I** missile has been designed to have ranges in excess of 4,000 nautical miles so the submarine's patrol area is increased by a very large factor over that currently available to **Poseidon SSBNs.** This greatly complicates the **ASW** task and requires the Soviet sensors to have greater detection range than they now have. At the same time, the quietness of **TRIDENT** will complicate their problem further by driving them to smaller detection ranges. Finally, the submarine has been designed to spend a greater percent of its time at sea so that a bombardment of the bases would catch only about one third of the fleet.

We are continuing to develop the Extremely Low Frequency **(ELF)** shore to submarine communications system which can alert the **SLBM** force in a manner that will significantly reduce the opportunities for detection. We are also continuing a broad interdisciplinary program to investigate submarine detection techniques under operational conditions. This program provides a hedge against Soviet breakthroughs and provides for development of countermeasures as required.

The vulnerability of our strategic command, control, and communications **(C^3)** network is as much a concern as the vulnerability of the forces themselves. Without an adequately survivable **C^3** system, our visible deterrence and our war-fighting capability suffer because we cannot assure ourselves, or the world, that we can gather the information, make the decisions, issue the orders, and execute those orders in consonance with our policy. We must assume that the Soviets would plan to attack those links whose loss would greatly reduce the effectiveness of our forces. We have studied what the effectiveness of our **C^3** system might be under attack conditions and have identified some immediate tasks to be accomplished. These relate to increased communications power in some of our aircraft and overall improvements in satellite communications. Long term actions will be determined as a result of a major study, the objective of which is to develop by mid-79 a comprehensive **C^3**-Intelligence modernization plan.

Force Enhancement

The third requirement I have noted for moderization of our strategic forces is force enhancement to maintain essential equivalence. Since 1970, the Soviet Union has embarked on a strategic force modernization program of impressive proportions. Since 1970, their **ICBM RVs** have increased by threefold. They are introducing the **Backfire** into their force (although these are assigned

theater missions, they have some capability against the United States). Also, they apparently have a new larger bomber under development which will be unambiguously intercontinental. **SALT II** will, if in effect, provide some limit to the scale of this numerical aspect of the Soviet challenge, but it cannot eliminate it.

Therefore, in order to maintain essential equivalence, we would have to do more than maintain our present capability. We must be prepared to increase the capability of our strategic forces to offset the force enhancements being made by the Soviet Union. Our force modernization program, rather than mirror image that of the Soviet Union, should be balanced and should emphasize features in which the United States excels. We should, of course, combine this effort with the programs needed to obviate obsolescence or vulnerability.

Primary emphasis should be placed on the development of a survivable and more capable land based **ICBM.** This system, as we see it now, would consist of a missile larger than the **Minuteman III** having several times its capability in terms of payload and nearly twice the accuracy. Also, a new basing mode would be developed in parallel to the missile to make it more survivable. The basing mode has not been selected yet; however, it is expected that we will be in a position to recommend one soon. A promising basing mode from a technical viewpoint is the Multiple Protective Structure (MPS-formerly MAP) approach. In this approach many (several thousand) vertical in-ground structures would be built, each one capable of containing a missile or missile simulator. Several hundred missiles and several thousand missile simulators would be moved about randomly in this field of protective structures as necessary to protect the actual location of the missile. Thus the enemy would be forced to target all of the thousands of vertical structures to insure potential kill of all of the missiles. This concept, while meeting the technical requirements for survivability, has been questioned in terms of its verifiability and our capability to bound the threat should the Soviets adopt a similar scheme.

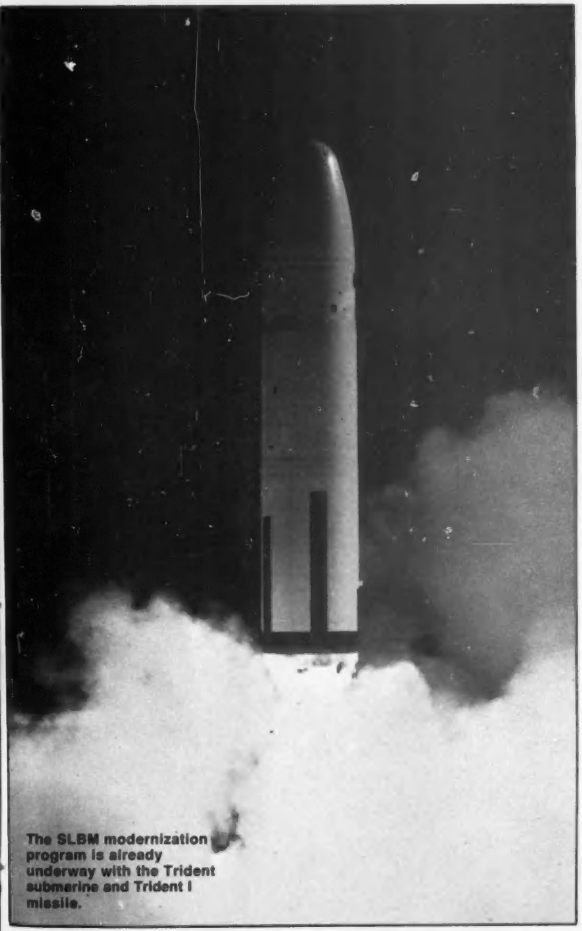
For this reason, following Defense System Acquisition Review Council (DSARC) IIA (Dec. 5, 1978), we directed the Air Force to study an airmobile/air launch concept, focusing on the use of a **STOL** (short take off and landing) aircraft which, under high alert conditions, could be operated out of thousands of airfields. This concept envisions the use of advance medium STOL transport (AMST)-derivatives to escape from a reactive **SLBM** attack directed against the main airbases (north-central CONUS) and capitalize on the existing large number of short runways at airfields throughout the country (civil as well as military). The aircraft would flush to these bases upon alert; if the main bases were attacked, the aircraft could either launch their missiles or move from base-to-base to deny the Soviets knowledge of their location and to provide a means to achieve endurance. As a result, a very large number of aimpoints are presented, as in **MPS.**

The missile selection for use in **MX** is more straightforward than the basing. We are preserving the option for the development of an 83" diameter missile (constrained by **Trident** tube diameter) having two stages applicable to **Trident II** use as that system matures. This approach allows for some financial savings, while insuring a near optimum carriage of RVs with high accuracy.

Full scale development of the **MX** system could start in FY 1979 following the basing mode selection. An initial operational capability in the mid-80s could be achieved. Each **MX** missile could carry about the same number of warheads as the **SS-18** or **SS-19** (although smaller in size and yield), so the program would help redress the balance as well as solve the force obsolescence and vulnerability problems addressed earlier.

As mentioned before, treaty limitations impose a limit on the number of **ABM** interceptors (100) that can defend our **ICBMs** and make this approach less attractive as an enduring solution to **ICBM** vulnerability. Nonetheless, it is appropriate, and indeed necessary, that we have a vigorous research and development program in this area to maintain our current technology lead, avoid any destabilizing technological surprises, provide options for defense, assist in the evaluation of U.S. strategic offense and Soviet ballistic missile defense, and support our intelligence efforts. To pursue **BMD** (ballistic missile defense) technology we have both an Advanced Technology Program and a Systems Technology Program. The major thrusts of our current effort are: to validate exoatmospheric homing, non-nuclear kill, and realtime discrimination in clutter; and to gather target signature data and to define the near and far term options for **ICBM** defense.

The **SLBM** modernization program is already underway with the **Trident** submarine and **Trident I** (C-4) missile. Concurrently with building **Trident** submarines, we are assessing the feasibility of a smaller and cheaper submarine which would use the same missile. If such a submarine promises to produce a more effective force, we would have the option of beginning production on this new submarine in the late 80s. Beginning in 1979, the **Trident I** missile will be produced for backfitting on the **Poseidon**



The SLBM modernization program is already underway with the Trident submarine and Trident I missile.

submarine and, as submarines become available, for installation in **Tridents.** This missile will allow much larger patrol areas than the present C-3 missile because it has about twice the range (for the same payload) and will preserve C-3 accuracy at this increased range.

We continue to advocate the concept of a mixed force of manned bombers and cruise missiles for the air-breathing **TRIAD** element. A mixed force is much more stressing to the defense in that the preferable responses to bombers and cruise missiles are quite different. For example, a potential threat to penetrating bomber forces is the use of **AWACS**-type surveillance aircraft and look-down/ shoot-down (LD/SD) fighters. In this situation the cruise missile offers the opportunity for saturating the defense, requiring the defensive systems to have much greater detection sensitivity and to be deployed by the thousands instead of the hundreds.

The bomber modernization program includes the research and development for a cruise missile carrier (**CMC**). The **CMC** may be viewed as a force enhancement program, and, perhaps, as replacement for the **B-52Gs**, rather than accepting the reliability and penetration problems and expenses involved in maintaining that fleet beyond 1990 (by which date the B-52Gs will be 30 years old). We would expect to modify a transport-type aircraft for this application, thereby minimizing research and development expenses. The major options are:

- a wide-body commercial jet (like the 747) which could carry 60 to 70 cruise missiles, and
- an **AMST**-like transport which could carry 20 to 30 cruise missiles.

Lower cost derivatives of the **B-1** are also being examined. We also envision moderate expenses for upgrading the **B-52Hs** (including new avionics and a new ECM system) to maintain them as a penetrating bomber force.

In summary, the present **TRIAD** of strategic forces provides an effective deterrent today. The combination of three individually effective elements greatly complicates any Soviet plan to blunt effectiveness and hedges against a Soviet breakthrough against any single element. For the future, we are also hedging by supporting each **TRIAD** element with effective options for improvement and by providing a broad supporting technology base.

Our **ICBM** force is presently well-hedged against Soviet action in passive and active defense. But there is a growing vulnerability to pre-emptive attack which could seriously threaten the force by the early to mid 1980s. We have a number of options in response and are actively considering alternatives with the intent of providing recommendations this year.

Our **SLBM** force appears well-hedged against all categories of Soviet actions to blunt effectiveness. But to continue our hedge against Soviet breakthroughs and to capitalize in an area where we have confidence and competence, we will maintain the option to improve the range and payload of the **SLBM** force and vigorously pursue a submarine security program.

Our air-breathing force of penetrating bombers and cruise missiles provides a combination which should be effective through the 80s. We will continue to assess Soviet efforts in active defense, and adjust the development of cruise missile technology to react appropriately. We also plan to consider a new penetrating bomber and a cruise missile carrier aircraft, seeking a sound technological building base which can provide a fundamental advantage in the long-term action-reaction environment.

We believe that a stable environment of mutual deterrence can be maintained at substantially lower strategic force levels than are deployed by both sides today. We will continue to seek further arms control agreements which will, in an equitable and verifiable manner, permit such reductions. In the absence of productive agreements, we will, of course, pursue all actions necessary to maintain our security.

SALT II will require some Soviet reductions and limit the U.S.S.R. to levels below what they could otherwise achieve, and in this sense our planning would be eased.

But even with an equitable and verifiable agreement, we will have to meet the challenges not addressed by this and future agreements and continue our technological hedges to sustain the conditions of deterrence in the long term. Prudent hedging must consider possible treaty breakouts as well as force improvements and breakthroughs in Soviet capabilities. In this future environment, I believe technology will play a vital and growing role.

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COVER: A Soviet craft underway.

CHANGE OF COMMAND

HONORS

The late **Gen. George S. Brown, Jr.** USAF, former Chairman, Joint Chiefs of Staff, has been awarded posthumously the 1979 Thomas D. White National Defense Award. The award is made to an American citizen who has contributed most significantly to the national defense and security of the United States in the preceding years.

REASSIGNMENTS

Gen. Robert H. Barrow, USMC, Assistant Commandant of the Marine Corps, to Commandant of the Marine Corps.

Gen. Robert E. Huyser, USAF, Deputy Commander-in-Chief, United States European Command, to Commander-in-Chief, Military Airlift Command.

ADM Robert L.J. Long, USN, Vice Chief of Naval Operations, to Commander-in-Chief, Pacific on ADM Weisner's retirement.

Lt. Gen. Edward C. Meyer, USA, Deputy Chief of Staff for Operations and Plans, has been nominated by the President as Chief of Staff, United States Army, and promotion to general.

RETIREMENTS

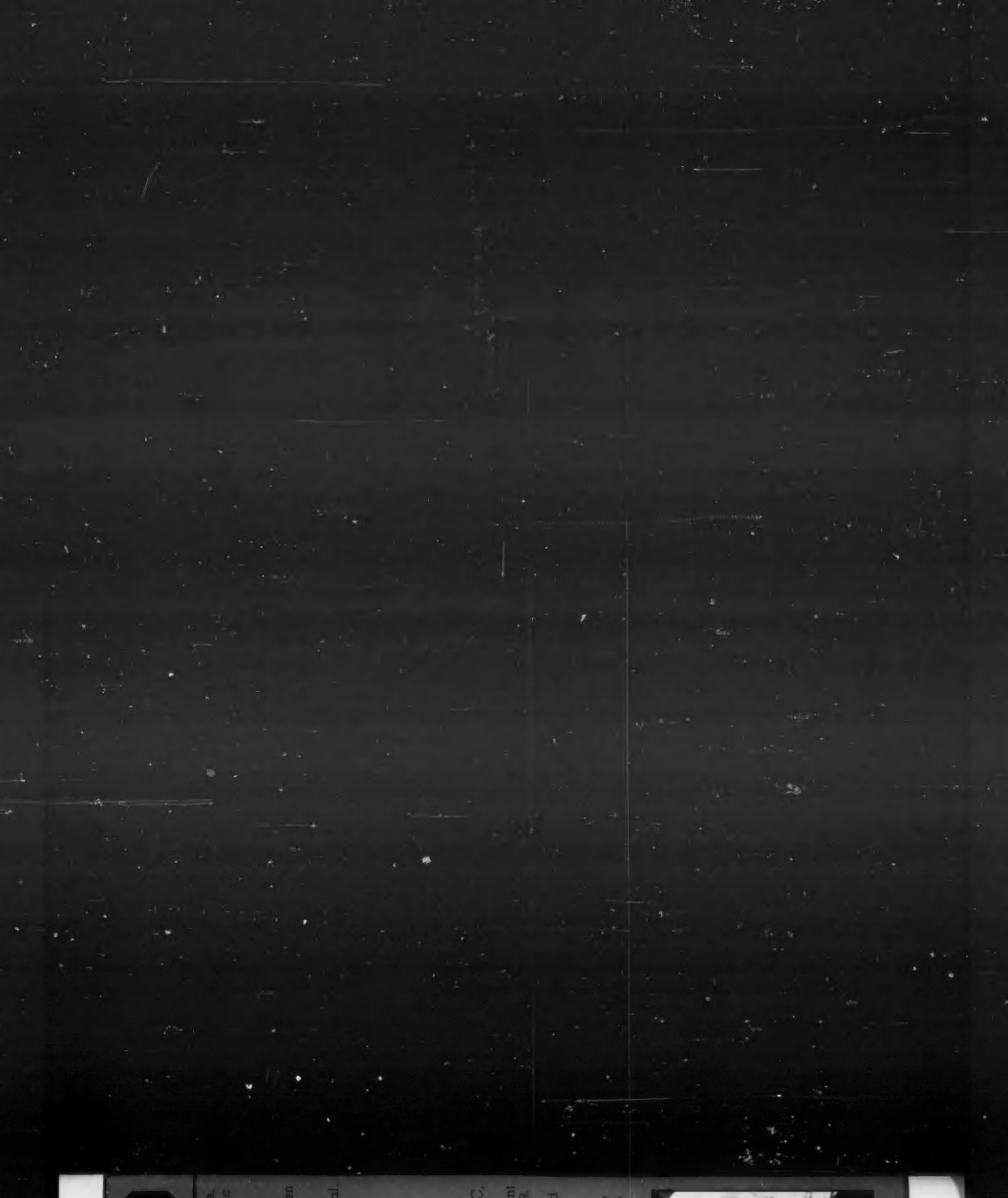
ADM Maurice F. Weisner, USN, Commander-in-Chief, Pacific to be placed on the retired list in grade effective November 1, 1979.

Gen. Louis H. Wilson, USMC, Commandant of the Marine Corps, nominated for retirement in grade effective June 30, 1979.

Lt. Gen. George G. Loving, Jr., USAF, Commander, United States Air Force, Japan, and Commander, Fifth Air Force, nominated to be placed on the retired list in his current grade effective July 1, 1979.

Gen. Barrow

Gen. Huyer

ADM Long

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